

WHAT IS CLAIMED IS:

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1. A wheel suspension assembly for a vehicle having wheels and a chassis, the suspension assembly comprising:
  - a suspension member which is rotatably attachable to the chassis, the suspension member being designed to rotatably receive a wheel;
  - a drive unit which is mountable on the chassis; and
  - a transmission unit, for transferring a drive force from the drive unit to the wheel, the transmission unit being extendible and retractable between the drive unit and the wheel to accommodate pivoting of the suspension member relative to the chassis.
2. The suspension assembly of claim 1, further comprising:
  - a transverse beam attached to the chassis, the suspension member being attached to the transverse beam.
3. The suspension assembly according to claim 2, wherein the suspension member is attached to the transverse beam at one end of the beam.
4. The suspension assembly of claim 2, further comprising:
  - vibration isolators between the beam and the chassis.
5. The suspension assembly of claim 1, wherein the transmission unit comprises a gear reduction unit.
6. The suspension assembly of claim 1, further comprising a control unit for controlling at least two of the wheels when driven to obtain the desired drive characteristics of the vehicle, whereby at least two of the wheels may be driven at the same or different speeds according to predetermined drive parameters of the vehicle.
7. The suspension assembly of claim 1, further comprising:
  - a drive unit provided for each wheel of a pair of the wheels.
8. The suspension assembly of claim 1, wherein the drive unit is a motor.
9. The suspension assembly of claim 1, further comprising:
  - a pivot which is rotatably attachable to the chassis, the suspension member being attached to the pivot.
10. The suspension assembly of claim 9, wherein the suspension member is a trailing arm suspension unit.
11. The suspension assembly of claim 10, wherein the trailing arm suspension unit is in the form of a triangular frame, wherein a first corner of the

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triangular frame is mounted to the pivot such that an axis of rotation of the pivot is the axis of rotation of the trailing arm suspension unit, wherein a second corner is designed to rotatably receive a wheel and wherein a third corner interfaces with a shock absorption unit.

5           12.     The suspension assembly of claim 1, wherein the transmission unit comprises a constant velocity joint being extendible and retractable between the drive unit and the wheel to accommodate pivoting of the suspension member relative to the chassis.

10           13.     The suspension assembly of claim 1, wherein the transmission unit comprises a drive shaft and two constant velocity joints, said constant velocity joints being located at each end of said drive shaft and, being extendible and retractable between the drive unit and the wheel to accommodate pivoting of the respective suspension member relative to the chassis.

15           14.     The suspension assembly of claim 1, wherein the transmission unit comprises a gearbox aligning the rotational axis of the drive unit with the rotational axis of the wheel.

15           15.     The suspension assembly of claim 2, wherein the drive unit is mounted on the chassis above the transverse beam, and wherein the transmission unit includes a downwardly extending drive shaft.

20           16.     A wheel suspension assembly for a vehicle having wheels and a chassis, the suspension assembly comprising:

                  at least two spaced suspension members which are rotatably attachable to the chassis, each of the at least two suspension members being designed to rotatably receive a wheel;

25           at least two spaced drive unit, which are, mountable on the chassis; and

                  at least two transmission units, each of said at least two transmission units interconnecting one of said drive units which are of said wheels, each of said transmission units transferring a drive force from said one of said drive units to said one of said wheels, the transmission unit being extendible and retractable between said one of said drive units and said one of said wheels to accommodate pivoting of the respective suspension member relative to the chassis.

17.     The suspension assembly of claim 16, further comprising:

at least two pivots which are rotatably attachable to the chassis, each of said at least two suspension members being attached to one of said at least two pivots.

18. The suspension assembly of claim 17, wherein the suspension members are trailing arm suspension units.

5 19. The suspension assembly of claim 18, wherein the trailing arm suspension units are in the form of a triangular frame, wherein a first corner of the triangular frame is mounted to one of said pivots such that an axis of rotation of the pivot is the axis of rotation of the trailing arm suspension unit, wherein a second corner is designed to rotatably receive a wheel and wherein a third corner interfaces  
10 with a shock absorption unit.

20. The suspension assembly of claim 16, wherein each of said at least two transmission units comprises a constant velocity joint being extendible and retractable between each of said drive units and one of said wheels to accommodate pivoting of one of said at least two suspension members relative to the chassis.

15 21. The suspension assembly of claim 16, wherein each of said at least two transmission units comprises a drive shaft and two constant velocity joints, said constant velocity joints being located at each end of said drive shaft and, being extendible and retractable between the drive unit and the wheel to accommodate pivoting of the respective suspension member relative to the chassis.

20 22. The suspension assembly of claim 16, wherein the each of said at least two transmission units comprises a gearbox aligning the rotational axis of the drive unit with the rotational axis of the wheel.

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